(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 033 834 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
17.12.2003 Bulletin 2003/51

(51) Int Cl.[7]: **H04B 10/17**

(43) Date of publication A2:
06.09.2000 Bulletin 2000/36

(21) Application number: **99123279.4**

(22) Date of filing: **30.11.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **02.03.1999 JP 5437499**

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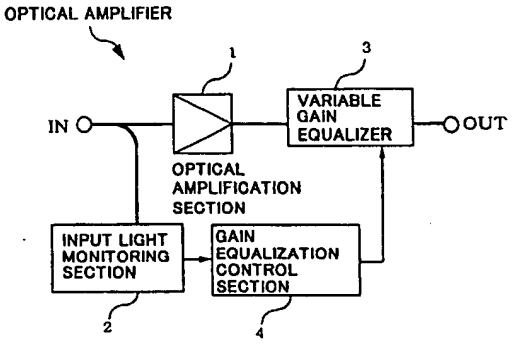
(54) Wavelength division multiplexing optical amplifier and optical communication system

(57) An object of the invention is to provide a WDM optical amplifier and an optical communication system which can ensure wavelength flatness for gain across a wide range of input light power levels, and which can obtain noise characteristics with minimum wavelength dependency.

Accordingly, the basic construction of the WDM optical amplifier has: an optical amplification section (1) connected between input and output ports (IN, OUT), an input light monitoring section (2) for measuring the input light power input to the input port (IN), a variable gain equalizer (3) with variable insertion loss wavelength characteristics, connected to the optical amplification section (1), and a gain equalization control section (4) for controlling the insertion loss wavelength characteristic of the variable gain equalizer (3) in accordance with the input light power measured by the input light power monitoring section (2). Due to this construction, the variable gain equalizer (3) is supplied with an insertion loss wavelength characteristic which corresponds with the variation in the gain wavelength characteristic of the optical amplification section (1), enabling compensation for any gain deviation in the output light.

FIG.1



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Printed by Jouve, 75001 PARIS (FR)